Motor News and Notes

HIGHWAYS IN AIR ADVOCATED

Right Angle Radio Streets to Fix Exact Position Held Feasible in America

Why is it that with all the remarkable progress accomplished in building safer, better and cheaper airplanes we do not yet see an air-minded country taking to the plane, as it took to the automobile 35 years ago asks Marcel Wallace in the New York "Times." The answer lies in the danger of bad visibility. It is not the plane that is at fault. Rarely do we hear of structural or motor failures to-day. Nor is it on account of any special difficulties in learning how to fly. The real cause of reluctance to take to the air is one against which the qualities of the plane are absolutely of no avail, which sooner or later every flier will have to face.

The United States Department of Commerce has done wonderful work and has indeed rendered possible the keeping of regular airline schedules during all weather conditions. This has been done with the aid of radio. Unfortunately, the methods used are good only for specially trained men, professional fliers who are also good radio operators or who have the help of such men.

There are two general methods now used:

The radio compass. This is a special receiver using a loop which indicates the general direction to a radio station: broadcasting or commercial. This method is used only in places where there are no beam facilities. It has the disadvantage that it merely indicates the momentary direction, with certain approximation, without taking into consideration drift.

Beam Methods Instituted

Some ten years ago the Department of Commerce started installing a series of radio range beacons. These transmit characteristic signals from equivalent loops which interlock and mark the course along the line of equal strength. We have from each important centre two transmitters; One sending the letter N (dash dot) and another one sending at an angle and during the silent intervals of the first one, the letter A (dot dash).

Over a certain area, which represents the beam or "Avenue," these signals interlock with equal strength, so that the pilot hears just one long dash which lasts about five seconds, followed by Morse code letters identifying the station. These signals can be heard about 100 miles except during conditions of bad static.

The pilot flying over such a beam can tell at all times whether he is "on course" or "off course" to the right or to the left. He cannot tell, however, how far along he has progressed nor how far he is from his destination. If he goes too much "off course," which may quickly happen with the fast-flying planes of to-day, he completely loses his radio guidance.

Improvements have been made by introducing from place to place "radio-marker beacons." These are smaller power beacons, whose principal purpose is to mark intermediate landing fields and also to indicate the intersection points of adjacent range courses. In some cases they are also used to mark important or outstanding topographical features.

Great improvements have been made lately in the ultra-high frequency band which points toward this part of the spectrum as the one most indicated for flying aids. Series of "curtain beams" or "fans" are about to be put along the main radio-range beacons, so as to indicate the approach to air-ports. These curtains or fans will spread perpendicularly across each of the beams, around the landing stations, such curtains being recognized by a series of dots or dashes on a higher key than those of the main beacons. They will signal to the flier that he is within a few miles of the airport. Right above the airport he will pass over another radio beam spreading like a balloon above it.

Amateur at Sea

All these aids are splendid for the professional flier, specially one who covers the same course regularly. But how about the amateur who is not an expert radio operator who wishes to fly cross-country? The answer is: Do not attempt to fly unless you are positive you will have good weather all along.

A "block" system of avenues crossing each other, just like the avenues of a planned modern city, can be installed over all the important navigational areas and gradually extended to cover the whole country. Each avenue will be characterized by something distinctive: for example, its wave length or its tone.

The variation of wave length (or other signal characteristic) should gradually increase, or decrease, step by step, as we pass from one avenue to another. Wave length can be read on the dial of a radio receiver. Receivers can be made to tune themselves automatically in the signal predominating on any given place. A flier passing over a series of such beams or avenues, each having its own wave length which varies step by step, can at all times, without touching his radio, read on his dial the number of his "avenue."

Intersecting Avenues

If we have such avenues running north and south and others running east and west, he will be able to read at all times the point of intersection of the two avenues and thus determine his position. The country should be divided into zones in which the same band of frequency would be repeated.

Let us say that these zones are 250 miles square and that a band of one megacycle is allocated for the purpose. We could use one-half megacycle (500 kilocycles) for north to south beams and another one-half megacycle for east to west beams. Our 250-mile square will thus be subdivided so that each point is represented by two frequencies, one representing longtitude and the other latitude.

As we progress in one direction or another, north, south, east or west, each mile covered is represented by an increment of plus or minus two kilocycles.

We should use ultra-short wavelengths for this purpose because stations can be easily and cheaply installed with small directive antennae, which take very little space, and consume very little current and the signals are steady and reliable at all times of the day or night and during all seasons, provided we do not attempt to use them for very long-range transmission. They are not subject to static.

Due to these conditions we can accomplish something which is impossible by any other method: That is to establish over certain areas not only definite paths or avenues, giving the pilot approximate information as to his position, but even a definite "field-strength" pattern, which, translated into lay language, means: give a definite idea how far we are between, let us say, two avenues north and south and two avenues east and west, or if such avenues are about ten miles apart we could tell within about one mile where we are at all times.

Continuous Development

The number of stations to be installed would vary with the amount of definition or precision required.

Continuous development can be made, because each square mile is determined by two frequencies which serve the pilot for identifying his position and the engineer in erecting a station. These stations can be put on telegraph poles or on sheds, whether in cities, on the road or on the farm, and each of these stations, unattended, would transmit the two frequencies assigned to that particular location.

Cost would, of course, be proportional to the miles covered and the amount of "definition" required. This cost per square mile would not be greater by this system than by any other system using beams as flying aids. As the system, however, shows its real advantages over large areas rather than over narrow paths, it may appear on first analysis as expensive and unjustified for the present aid-traffic conditions.

But by giving more safety in the air and providing ease of flying by means of "Airoads" we will encourage more flying; also more flying will justify more "Airoads," and thus the cycle is started and the ball will keep on rolling. We have already the example of the motor car.

A Manchester lady magistrate recently refused to endorse a motorist's licence, and protested from the Bench against Justice Goddard's ruling that it was no reason to omit an esdorsement simply because the motorist needed the licence for his livelihood. "In the past," continued the magistrate, "we have used our own discretion. Nowadays it seems we are not allowed to do so. However trivial a case may seem it may be serious to someone."

MOTOR CAR ECONOMY STRESSED

New Fuel Savers Offered by One Manufacturer

Action of leading car manufacturers in the lower-price field indicates that motorists still are thinking in terms of economy in the operation of their automobiles. This is particularly true of fleet owners who are interested in saving even a fraction of a cent per mile.

Plymouth has just announced that special "economy equipment" is available for all 1937 models. It can be obtained in two different groups, depending on the nature of the country where the car is to be used. Economy group No. 1 consists of a special carburetor, a special intake manifold and a rear axle ratio of 3.7 to 1. This group effects an average economy increase of 15 to 20 per cent., it is said and can be secured on special order at no additional charge.

For operation in flat country, where hill-climbing is at a minimum, economy group No. 2 includes all the features of group No. 1 plus a hardened steel throttle-stop and manifold heat-shields. For this group, which makes a saving of 25 to 30 per cent, compared with standard equipment, a charge of $3.75 is made.

Aims at Fleet Sales

Ford has been making a strong bid for fleet business with its 60-horsepower V-eight car. It is reported that about one-third of Ford's sales this year had been of this type. Willys-Overland, which has as its biggest sales point its economy of operation, has already overshot its year's mark and is scoring one of the year's outstanding successes in the industry. Another car maker in the low-price field has available an economy model which it is not advertising or promoting, but which its dealers sell when they are pushed by competition from companies with economy models.

With agrol fluid (power alcohol) at 22¾ cents per gallon, blends of it and gasoline can be made to sell at the same price as gasolines of equal anti-knock value now on the market, declared William W. Buftum, of the Chemical Foundation, Inc., New York, in addressing the Farm Chemurgic Council in Detroit recently.

Here is a fisherman's story applied to motoring. It comes from Ottawa's Department of Fishing and is to the effect that fishermen motorists in Cape Breton Island, Nova Scotia, are lubricating their cars with fish oil. The idea is alleged to have originated when some 50 big "black fish" floundered on shore and were captured at low tide. Some hundreds of gallons of oil were obtained from these fish.

NEW WILLYS POPULAR WITH WOMEN

Popularity of the new Willys car among women drivers is revealed in an analysis of retail sales, according to a report just received by Mr. David R. Wilson, president of Willys-Overland Motors, Inc., builders of Willys motor cars.

Reports from dealers, made in response to further inquiry as to the reason for the demand for the car on the part of women drivers has developed several specific points which find favour.

Among these are cited ease of control which makes the car a popular one in traffic driving; Simplicity of parking, the car being easy to drive into parking spaces because of its wheelbase and short turning radius; Road vision, a result of a wide windshield, wide windows both front and rear in the sedan model. and the absence of blind spots which is an inherent factor of all steel body construction.

Other items appealing to the feminine taste and mentioned as reasons for selecting the car are luxury of fittings, individual style of the body, ease of riding, and the low cost of operation.

Among the first women users of the new Willys was Miss June Lang, popular screen star of the Twentieth Century-Fox Film Corp. whose car is now a daily centre of attraction at the Hollywood producing organization's lot.

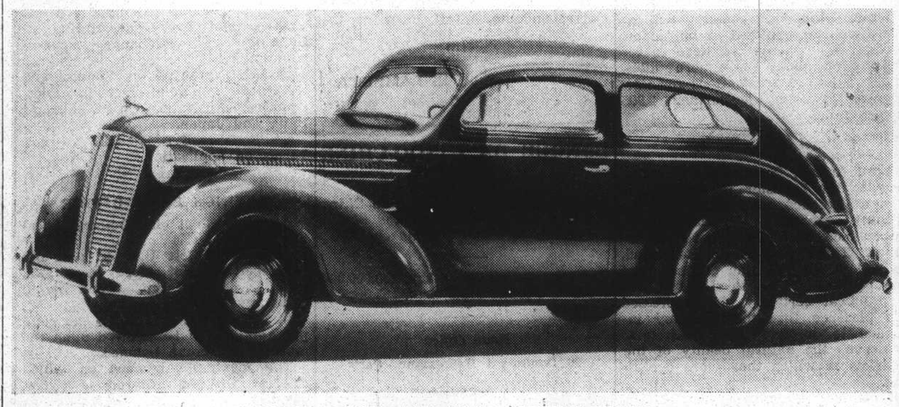
FORD NEGOTIATES STEEP CLIMB

One of the most gruelling tests to which a motor car can be put in the Americas is the climb to the statue of Christ standing at an elevation of 13,500 feet at the crest of the highway over the Andes, between Chile and Argentina.

The journey from Santiago, Chile, takes the motor car to altitudes encountered on few other highways in the Western Hemisphere. The lofty heights of the Andes—where the rare atmosphere sometimes causes discomfort to all but the healthiest of persons—provided no serious obstacles, however, to a 60-horsepower Ford V-8 which recently made the climb to the religious shrine.

The first leg of the jaunt made by the 60-horsepower Ford was from Santiago, 1,680 feet above sea level, over the Cuesta de Chacabuco grade, which took the party to a 5,000-foot elevation. The route then descended to Los Andes, a border town, to climb again to Rio Blanco, 5,000 feet above the sea. From this point the way led to Portillo, climbing to a 10,000-foot elevation in 25 miles, then four miles to Caracoles, 11,200 feet, and five miles farther to the top of the Andes road to the 13,500-foot elevation.

The trip to the Statue of Christ can be made only in the Chilean summer, for in winter roadways are blocked by snowdrifts which sometimes reach a depth of 25 feet.



DODGE DELUXE TWO-DOOR TOURING SEDAN

This popular model, distributed locally by Messrs. China Motors achieves popularity by reason of its durability, dependability, stamina and comparatively low petrol consumption.

DELIVERY OF DODGE TRUCKS

Long Trek Described in U.S. Trade Magazine

One who has never traveled in the interior of China has little or no conception of the amount of road traveling that really can be done by motor, wrote Max Friedman, Managing director of Messrs. China Motors, Fed., Inc., to the Dodge "Graphic." In fact, very few people realize that modern roads are constantly being built, linking up the various Provinces with a network of modern highways. Considering the topography of China the great number of roads already in use, many transportation experts consider it a Herculean accomplishment.

No longer is China obliged to depend solely upon waterways for transportation, a highly uncertain method of travel, as at many seasons of the year the river levels are too low to reach interior points. This was well demonstrated recently when we delivered a number of Dodge trucks to Changsha, Honan Province. Early this year two fleets of Dodge trucks, purchased by the Chinese Government, started from Shanghai for this distant city. It was the first time that a fleet of trucks had traversed this entire distance. In order to reach their final destination, they had to be ferried across rivers twelve times, yet they made the entire distance of 872 miles in the remarkable time of four days, with no night travelling.

A special feature of these Government trucks is that they are equipped with auxiliary fuel tanks having a capacity of 135 gallons. This is economical as well as convenient, for refueling is an expensive item in many parts of the interior.

The present progressive Government, under the able leadership of Gen. Chiang Kai-shek, who is the prime mover in highway building, has done wonders in improving transportation facilities, and has built thousands of miles of highways throughout China. Because of this modernization, China Motors, Dodge distributors for Central China, are now able to deliver Dodge trucks to the Honan Highway Bureau of Changsha, with the same speed and in the same manner that Dodge trucks are delivered in the United States, to-day.

Curiously enough, the most primitive methods of transportation still exist in China side by side with the most modern. Less than ten years ago, travelers saw barefooted coolies jogging along a narrow footpath with bags of mail balanced from the ends of a pole just as it was carried 3,000 years ago, and is still being carried in many places throughout China. These same travelers would now see hundreds of motor trucks speeding along the principal highways, bearing the Government's mail, or they might see the sudden flash of glistening wings as a Government mail plane speeds to some distant province. Each is important and each is doing its part in modernizing and developing the new commercial life of China.

Following the nautical example of lighthouses to help sailors find their bearings, a light tower has been erected at Leipzig for motorists. Its walls are of glass and on them are indicated a list of distances from other towns, directions for reaching important cities. At night the tower is illuminated.

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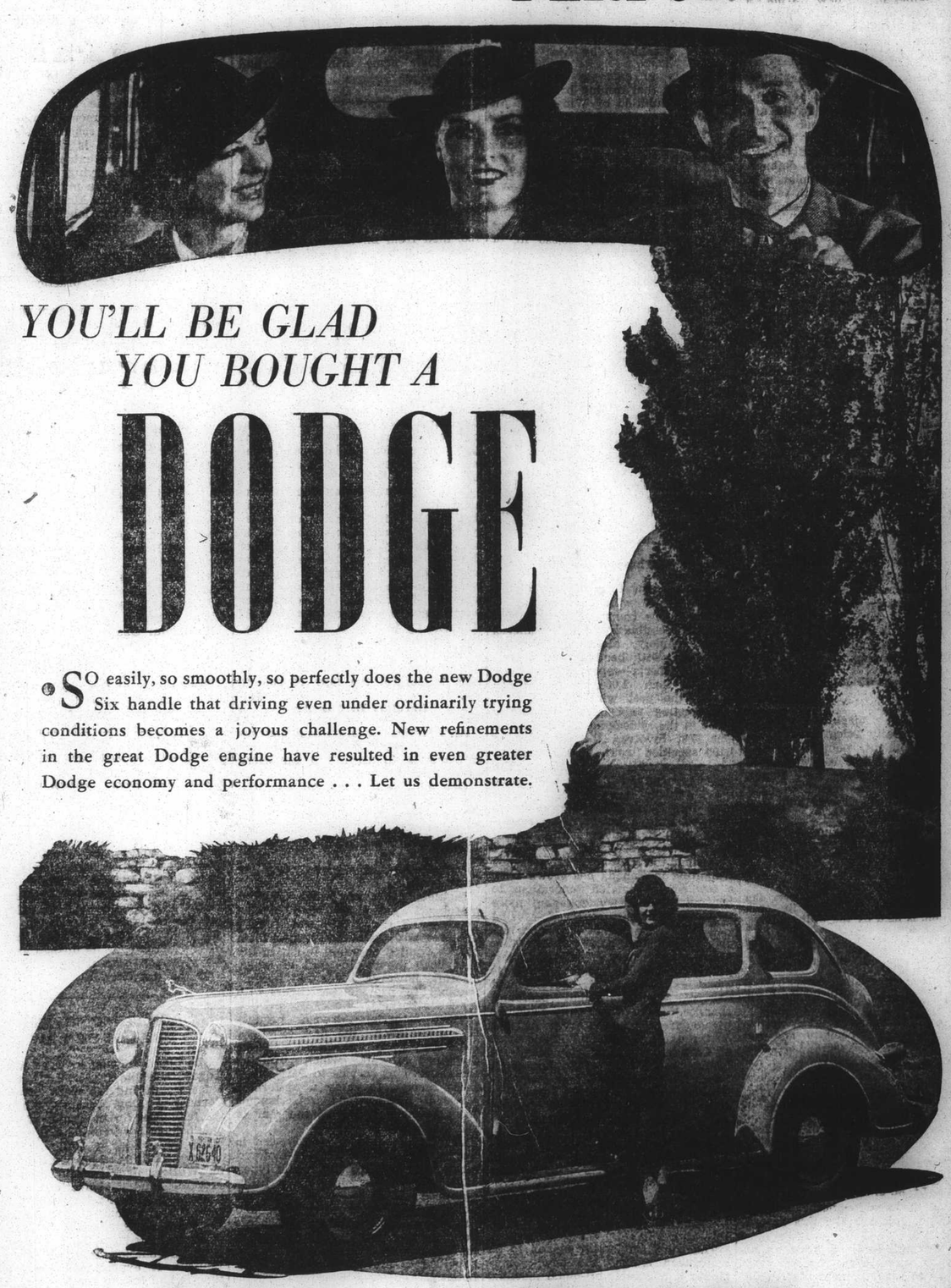

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